



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,086	09/20/2001	Rajiv Doshi	19441-0034	5046

7590 12/21/2006
Daniel J Warren
Sutherland Asbill & Brennan LLP
999 Peachtree Street N E
Atlanta, GA 30309-3996

EXAMINER

WALKER, KEITH D

ART UNIT	PAPER NUMBER
----------	--------------

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/960,086

Applicant(s)

DOSHI ET AL.

Examiner

Keith Walker

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-37 is/are pending in the application.
- 4a) Of the above claim(s) 11-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claims 1 & 3-37 are pending in the application and claims 11-37 are withdrawn.

Claims 1 & 3-10 are pending examination and are rejected as below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 4 & 9 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,763,114 (Khandkar).

Khandkar teaches a fuel cell system comprising a fuel cell stack with an internal manifold that exchanges heat between partially reacted fuel fluid and partially reacted oxidant fluid without reacting. A recuperator (80) is used to exchange heat between the heated oxidant fluid and the fuel fluid (Figs. 2, 8 & 9; 12:30-58, 13:46-60, 14:54-67, 15:43-50). A combustion chamber surrounds the fuel cell to finish reacting the partially reacted fuel and oxidant. A thermal enclosure surrounds the whole assembly, keeping all the components at the correct operating temperatures (20:4-10, 16:15-25, 13:9-16). Inside the enclosure, the fuel travels through a reformer, preheating the fuel before delivery to the fuel cell stack (10:44-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,763,114 (Khandkar) in view of US Patent 4,729,931 (Grimble).

The teachings of Khandkar as discussed above are incorporated herein.

Khandkar is silent to the use of a fuel vaporizer.

Grimble teaches using a nozzle that forms a jet stream from the fuel, and thus vaporizes the fuel (2:47-49).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system on Khandkar with the vaporizing nozzle of Grimble to effectively distribute the fuel to the fuel cell system.

3. Claims 6 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,763,114 (Khandkar) and US Patent 4,729,931 (Grimble) in view of US Publication 2003/0022050 (Barton).

The teachings of Khandkar as discussed above are incorporated herein.

Khandkar does not disclose airflow delivery, which pressurizes the oxidant and provides pressurization for the fuel, a pressure relief valve, or an air compressor for delivering airflow.

Barton discloses fluid supply systems for fuel cells, which include pressurized fluid and pressure relief valves for the purpose of controlling fluid flow in the fuel cell ([0049, 0051 and 0054]).

Therefore, it would have been obvious to one of ordinary skill in the art to use the pressurization and pressure control systems disclosed by Barton in the fuel cell system disclosed by Khandkar in order to control oxidant and fuel flows in the fuel cell system.

4. Claims 7 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,763,114 (Khandkar) in view of US Patent 4,087,076 (Morrow).

The teachings of Khandkar as discussed above are incorporated herein.

Khandkar is silent to thermal enclosures which are vacuum vessels or which include multi-layer insulations.

Morrow teaches the most effective insulation for high temperature electrolytic devices consists of multi-layer radiation shields of molybdenum-zirconia cloth in a vacuum insulation (7:37-47).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the insulation of Khandkar with the insulation of Morrow to improve the insulating properties of the thermal enclosure.

Response to Arguments

Art Unit: 1745

Applicant's arguments filed 10/6/06 have been fully considered but they are not persuasive. Applicant traverses the rejections but fails to point out the deficiencies of the prior art; therefore, no response can be made.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Trainer, Susy Tsang-Foster can be reached on 571-272-1293. The fax

Art Unit: 1745

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker


SUSY TSANG-FOSTER
PRIMARY EXAMINER